Abstract

The invention provides a variety of surgical instruments for forming a liquid jet, which are useful for performing a wide variety of surgical procedures. In some embodiments, the invention provides surgical liquid jet instruments having a pressure lumen and an evacuation lumen, where the pressure lumen includes at least one nozzle for forming a liquid jet and where the evacuation lumen includes a jet-receiving opening for receiving the liquid jet when the instrument is in operation. In some embodiments, the pressure lumen and the evacuation lumen of the surgical liquid jet instruments are constructed and positionable relative to each other so that the liquid comprising the liquid jet, and any tissue or material entrained by the liquid jet can be evacuated through the evacuation lumen without the need for an external source of suction. The invention also provides a variety of surgical liquid jet instruments that are constructed and configured specifically for use in a surrounding liquid environment or a surrounding gaseous environment. The invention also provides a variety of surgical liquid jet instruments that are rotatably deployable from an undeployed position, for insertion into the body of a patient, to a deployed position, in which there is a separation distance between the liquid jet nozzle and the jet-receiving opening that defines a liquid jet path length. The invention also provides surgical methods utilizing the inventive surgical liquid jet instruments, and methods for forming components of the surgical liquid jet instruments.